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Surgical Management of Varicose Veins of the Lower Limbs: Retrospective Study of 280 Patients

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Abstract

Varicose veins of the lower limbs are a cosmopolitan condition, thought to be rare in Africa but widespread in Europe. The aim of this study is to analyze the indications and evaluate the results of surgical management of varicose pathology of the IM in Dakar. We enrolled 280 patients, with a mean age of 36 and a sex ratio of 2. Factors favouring venous disease were dominated by prolonged orthostatism and multiparity. The average consultation time was 6 years. The reasons for consultation were functional manifestations, progressive complications and aesthetics. The venous trunks concerned were the great saphenous vein (GSV) in 58.9% of cases, the small saphenous vein (SSV) in 29% of cases, perforating veins and varicose veins were unsystematized in 28.5% of cases. Surgery was performed under spinal anaesthesia. Surgical procedures were dominated by stripping of the GSV, crossectomy of the SSV and staged ligations. One patient developed meningismus immediately after the operation. Average follow-up was 2 years. Mortality was null.

Keywords

Varicose Veins, Lower Limbs, Stripping

1. Introduction

Varicose veins are permanent dilatation of the superficial veins of the lower limbs, associated with damage to their walls and valvular incontinence. These are cosmopolitan diseases, supposedly rare in Africa but widespread in developed countries. For more than a century, varicose veins have been treated with ablative

surgical techniques, stripping being the standard treatment [1]. The aim of this study was to analyze the indications and evaluate the results of surgical management of varicose pathology of the lower limbs.

2. Materials and Methods

This is a retrospective study from January 2012 to December 2021 including all patients operated on for varicose veins of the lower limbs at the Department of Thoracic and Cardiovascular Surgery of the Fann National University Hospital. All data were collected from patient files (marital status, history, clinical and paraclinical aspects). All patients underwent venous Doppler ultrasonography of the lower limbs. The indication for surgery was established after a surgical staff to exclude patients who were to benefit from medical treatment alone or sclerotherapy. The techniques used were crossectomy, stripping and stepped ligatures. Endovascular techniques were not yet available in our center at the time of the study.

All patients were operated on supine under spinal anaesthesia, and after surgery received elastoplast restraint and elevation of the lower limbs. After 5 days of compression, patients were put in compression stockings for at least 6 months. All patients were reviewed in consultation after 1 month for a clinical check-up. After patient consent, we studied the epidemiological, clinical, paraclinical and therapeutic aspects, as well as follow-up.

3. Results

During this period, 280 lower limbs were operated on, some patients had bilateral procedure. The average age was 36 [15 - 88 years], with a sex ratio of M/F = 2. Factors favouring venous disease were dominated by prolonged orthostatism (45%) and multiparity (10%). Other contributing factors are shown in **Table 1**.

Table 1. Factors favouring varicose veins of the lower limbs.

	Number	Percentage	P value	OR IC (95%)
High-risk professions (Military++)	128	45	0.044	1.501 [1.0954 - 2.362]
Multiparity (2 to 7 gestures)	29	10	-	-
Oral contraception	10	3.5	0.827	-
History of deep vein thrombosis	06	2	0.584	-
Surgery on lower limbs	04	1.4	0.918	-
Pelvic surgery	03	1	0.343	-

The reasons for consultation (**Table 2**) were functional manifestations of venous insufficiency in 54% of cases (leg heaviness, cramps, paresthesias and edema), complications of varicose veins in 25% of cases (chronic leg ulcer, hemorrhage due to varicose vein rupture) or aesthetic concerns in 20.7% of cases. Clinical manifestations are variably described by patients as leg heaviness, pain in the

venous path, itching or nocturnal cramps, paresthesias and sensations of edema or swelling.

Table 2. Reasons for consultation.

Functional signs	Number	Percentage
cramps	100	35.7
leg heaviness	88	31
paresthesia	50	18
localized pruritus	10	6.4
Evolving complications		
leg ulcer	72	25
edema of the lower limbs	45	16
varicose vein rupture	09	3
Aesthetic concerns		
varicose vein	32	11
hyperchrome dermatitis	17	6

The venous trunks involved were the great saphenous vein in 58.9% of cases, the lesser saphenous vein in 29% and perforators in 5%. Varicose veins were poorly systematized in 28.5% of cases. Indications were based on the existence of significant venous reflux on venous Doppler ultrasound of the lower limbs. This reflux concerned the great saphenous vein in 89% of cases, the lesser saphenous vein in 63.5% of cases, and perforating veins in 5% of cases. In all patients, the deep network was permeable. Surgery for varicose veins of the lower limbs was performed under spinal anesthesia.

Surgical procedures were dominated by stripping of the greater saphenous vein in 84.6% of cases, crossectomy of the lesser saphenous vein in 53% and staged ligation in 56.4% of cases. Venous compression with an elastic bandage was systematically applied for 5 days, followed by compression stockings for at least 6 months. The average follow-up time was 2 years. Postoperative follow-up was straightforward in 94.6% of cases, with disappearance of truncal varicose veins and regression of symptoms. However, there were a few complications. An immediate complication was meningitis following spinal anaesthesia, requiring hospitalization in intensive care and antibiotic therapy, with a favorable outcome. Late complications included persistent varicosities (5% of cases) requiring additional sclerotherapy. Mortality was nil, both post-operatively and during follow-up.

4. Discussion

Varicose vein surgery of the lower limbs is common in sub-Saharan Africa [2]-

[4]. In our series, varicose veins of the lower limbs affect a young population with an average age of 36 years, like the African series by Dieng, Ayachi and Bensaid [2] [5] [6]. On the other hand, in Western series, varicose disease is more frequently described in patients over 40 years of age [7]. In our series, males predominated (66%), as in Dieng's African series (65%) [2], Diallo (58.1%) [4] and Ayachi (65%) [5]. In contrast to the European series [8] [9] or they predominate in women. The causes are dominated by essential varicose veins with the presence of favouring factors as in the Dieng series [2] particularly occupations involving prolonged standing. In our series, there is 1.5 times more risk of having clinical ostial reflux when you work in a high-risk profession than when you don't, with a significant p-value of 0.044 (**Table 2**). Multiple pregnancies and use of oestroprogestins are also found in our series and in other series [4] [9]. However, we found no correlation between the risk of clinical ostial reflux and other factors favouring varicose veins of the lower limbs.

Consultation and surgical indications were motivated by aesthetic reasons in 40% of cases in the Dieng PA series [2], whereas in our series and Diarra's [3] functional manifestations predominate, respectively 54% and 59.6%. In our series, as in the literature, surgery is chosen in the event of complications [2].

Management begins with the use of elastic support stockings, which are essential after surgery, as recommended in all series in the literature. Surgical treatment is based on consistent pathophysiological concepts, and is painless, minimally immobilizing and aesthetically pleasing. It involves removing pathological veins and the sources of reflux feeding them. Elimination of reflux between the deep and superficial venous networks at the saphenofemoral and saphenopopliteal junctions, between the pelvic network and the veins of the lower limb, and at perforators. Removal of pathological veins: stripping of the greater saphenous vein after crossectomy by ligation flush with the femoral vein, combined with ligation of the various afferent collateral branches. As in our series, it is the most frequent surgical procedure, often associated with staged ligatures along the vein path [4] [10]. Despite the development of instrumental means, the practice of "deveining" is still very much alive in our regions.

Postoperative compression is essential after surgery [2] although no randomized study has compared no compression with compression. The latter is the subject of a professional consensus. Compression can be applied by bandage or compression stockings [8].

Varicose vein surgery has low morbidity and virtually no mortality [2] [3]. Recurrences are low, often linked to the discontinuation of compression stockings. Post-operative complications are dominated by nerve damage (3.84% [3]), surgical site infections (3.8%) [3] 1.18% [6], the persistence of a few varicose veins 10% in our series, like Bensaid's series [3] 13.46% and Frileux [11] 14%.

Despite our satisfactory results, the surgical techniques we use are becoming increasingly obsolete. Today, with the advent of endoscopic surgery and especially laser surgery, open surgery has become rare, especially in Western countries.

These techniques are rarely used in our center because of the much higher cost.

5. Conclusion

Varicose veins of the lower limbs are common, and surgical management of them has evolved considerably, in parallel with methods of investigating the venous system. In the face of competition from new endovenous methods, varicose vein surgery has retained its importance, with a low mortality rate and satisfactory results. It is an integral part of the overall treatment of venous insufficiency, together with elastic support and venous hygiene measures.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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